

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/E2005/000001

International filing date (day/month/year)
13.01.2005

Priority date (day/month/year)
13.01.2004

International Patent Classification (IPC) or both national classification and IPC
G06F3/02

Applicant
MACKLIN, Nuala

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

10/586025

International application No.
PCT/E2005/000001

10/586025 10.13 JUL 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/E2005/000001

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-30
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-30
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

AP20 Rec'd PCT/PTO 13 JUL 2006

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document(s):

D1: US 5 892 499 A
D2: US 3 945 482 A *
D3: US 5 311 210 A *
D4: US 5 788 195 A *

* Refers to a document cited as evidence of the skilled person's general knowledge and experience.

2. The application does not meet the requirements of Article 6 PCT because claims 1, 2, 16, 17, 28, 29 and 30 are not clear.
- 2.1. Line 10 of claim 1 refers to "a curved unit (17)" whereas page 10, lines 18 and 22-23 of the description refer to "a curved surface (17)". The claim should be amended to bring it into conformity with the description.
- 2.2. The features of claim 2 are already present in claim 1 (see lines 8 to 9). Hence claim 2 should be deleted in order for the claims to be concise.
- 2.3. Line 18 of claim 16 refers to "keys positioned at the end of each row are slightly raised" but page 6, lines 16-18 of the description refers to "keys positioned at the end of each row that are commonly operated by the ring and little fingers are slightly raised". The claim in its present wording implies that the keys at both ends of each row are slightly raised but the description clearly demonstrates that this is not the case. This claim should be amended to remove this ambiguity by inserting the phrase "keys positioned at the end of each row that are commonly operated by the ring and little fingers are slightly raised" in line 18 of the claim.

- 2.4. The additional feature of claim 17 (that "one or more keys on the keypad have dual functionality") is ambiguous and the reader is forced to refer to the description to interpret it. Page 6, lines 28-30 show that what is meant is that a key can be used to enter more than one letter. The claim should be amended to make this clear.
- 2.5. Claim 28 refers to itself; it is probably meant to refer to claim 26. Claim 29 refers to claim 28, although it actually describes a mere alternative to the features of that claim; it should probably refer to claim 26 as well.
- 2.6. Claim 30 unnecessarily relies on the description and drawings to ascertain its technical features, contrary to the requirements of Article 6 and Rule 6.2.(a) PCT. It should therefore be removed.
3. The subject-matter of claim 1 does not meet the requirements of Article 33(3) PCT as it does not involve an inventive step.
 - 3.1. Document D1 (see in particular figures 4, 11 and 13 to 23 and accompanying text) discloses an input device (52) including a keypad having two groups of keys, one for the left hand and the other for the right, a generally flat forearm (27) support means, the keypad being inclined on a convex, downward (i.e. negative) surface (26) of the device - distinct from the forearm support but contiguous to this - such that the rows of keys furthest away from the wrist of the user are lower than those closest to the wrist of the user (see figures 4, 11 and 13 to 23 and column 7, line 60 to column 10, line 21).
 - 3.2. The subject-matter of claim 1 differs from the teaching of D1 only in that:
 - (i) The keys are arranged in a series of curved rows so that a central key in each row is further from the user's wrist relative to at least one of the end keys in row (as opposed to the arrangement of D1, figure 16).
 - (ii) The wrist support means has a plurality of soft cushioned pads protruding from the upper surface thereof.

- 3.3. The problem solved by feature (i) is to better adapt the keypad to the shape of the hand (some fingers are longer than others), especially to the relative locations of the joints of the fingers.

However, using curved rows of keys in which the central keys of a row are further away from a user's wrist than those at the ends of a row is standard in the field of ergonomic keyboards to solve this problem (see e.g. D2, figure 1, column 6, lines 52-53; D3, figures 5A and 5B, column 5, lines 42-47).

- 3.4. The problem solved by feature (ii) is to relieve pressure on the wrist. The use of specially contoured wrist and thumb supports in conjunction with input devices for computers to solve this problem is well known in the art and taught, for example, by D5 (see figures 15, 16A, 16B, column 16, lines 22 to 62).

- 3.5. Since distinguishing features (i) and (ii) solve separate problems and do not produce any new and unexpected effect over and above the sum of their individual effects, they are a mere agglomeration and not a combinations. Hence, starting from D1 and using only his general knowledge and practice as illustrated by D2 and D5, the skilled person would arrive at the subject-matter of claim 1, which is therefore obvious.

4. The dependent claims do not contain any additional features which, in combination with those of any claim to which they refer, meet the requirements of the PCT regarding inventive step.

- 4.1. The additional features of claim 2 are already present in claim 1 (see section 2.2 above) and therefore do not contribute to an inventive step. Those of claims 3 and 10 are well known materials for providing a cushioned support. Those of claims 4 to 8 are rendered obvious by D5 (see the passages indicated in section 3.4 above), whose teaching the skilled person would readily adapt by simple trials and measurements so as to optimise the comfort of a given user.

- 4.2. The feature added by claim 9 is commonly used in conjunction with computer input devices (e.g. mouse pads) and would anyway readily occur to the skilled person since the wrist joints are known to be particularly sensitive to cold.

- 4.3. The additional features of claims 11 to 14 relate to means to adjust the position of the keypads; the skilled person routinely seeks to adjust the position of keypads to provide optimal comfort to the user (see e.g. D3, figure 1 and column 4, line 64 to column 5, line 15) and would readily adapt the adjustment means to particular circumstances (like the use of the device or the preferences of the user).
- 4.4. The feature added by claim 15 is known from D2 and D3, as indicated in section 3.3. above. That added by claim 16 is known from D2 (see figures 2 to 4, column 1, lines 42 to 44, column 2, line 64 to column 3, line 4, and column 6, lines 33 to 35: the keys for the little finger are raised to compensate for its shortness).
- 4.5. The additional features of claims 17, 20 and 22 relate to standard configurations of keyboards. Those of 18, 19 and 21 relate to subdivisions of keyboards which are either standard or which the skilled person would adapt according to user preferences. Those of claims 23 to 25 are common in keyboards. Those of claims 26 to 29 merely specify fields of application for ergonomic keyboards which would routinely occur to the skilled person.
- 4.6. The features added by claim 30 are not clearly defined (see section 2.6 above) and cannot contribute to an inventive step for this reason alone.
5. For the sake of completeness, attention is drawn to the following deficiencies:
- 5.1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the documents D1 to D4 are not identified in the description and the relevant background art disclosed therein is not at least briefly discussed.
- 5.2. Contrary to the requirements of Rule 6.3(b) PCT, the independent claims are not properly drafted in the two-part form, which is appropriate in the present case, with those features which in combination are part of the closest prior art (cf. document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and the remaining features in the characterizing part of the claim (Rule 6.3(b)(ii) PCT).

6. In view of the available prior art, it does not appear that any part of the application could serve as a basis for an allowable set of claims. Hence, a negative IPER is to be expected.